



NETWORKS FAQ

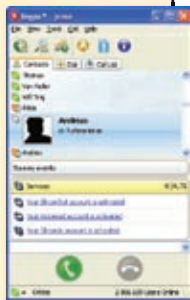
Q I want to use VoIP on my broadband connection. Will the voice calls slow down my internet connection, and is it worth upgrading my broadband connection to a faster speed?

A On average an internet phone call requires roughly 90Kbit/s in both directions for good-quality audio. If you have a 1Mbit/s connection this seems plenty, but broadband speeds can be misleading.

The quoted speed refers to the download speed. The upload speed is usually a lot slower, typically around 256KB/s. The upshot is it's quick to view web pages and watch videos online, but slow to copy files to a website. So, while a voice call doesn't take much of your download speed it does take a lot of your upload speed. If you make too many calls, you'll find websites are slower to access. If you use a lot of file-sharing applications, you can find there's no bandwidth left for voice calls. In practice, you're limited to making two calls over a 1Mbit/s connection.

It's worth looking for the broadband deal with the fastest upload speed and thinking about investing in a QoS product such as Hawking's Broadband Booster (see page 41), which prioritises your real-time traffic.

david@computershopper.co.uk



HOTLIST WIRELESS ROUTER

BUFFALO AirStation G54 High Power

RATING ★★★★★

PRICE £67 inc VAT

SUPPLIER <http://uk.insight.com>

DETAILS www.buffalo.co.uk

Buffalo's High Power router uses brute force signal strength to give the fastest and longest wireless transmission we've seen. The router provides a speed boost to all devices on the network. The management interface is one of the easiest we've used, and the router is very well priced. An excellent choice.



SPECIFICATIONS 802.11g wireless router (125Mbit/s turbo mode), four-port Ethernet switch, ADOSS. Part code WHR-HP-G54

REVIEW HOME MONITORING

MOTOROLA Homesight Easy Start Kit

RATING ★★★★★

PRICE £230 inc VAT

SUPPLIER www.pcworld.co.uk

DETAILS www.motorola.co.uk

Motorola has designed the Homesight kit to provide complete home monitoring and security using modular wireless peripherals that start from £30 including VAT. Its Easy Start Kit gets you the USB wireless receiver, which can also play host to three wired cameras, a passive infrared (PIR) motion-sensor camera and a window/door sensor. You can buy extra cameras and sensors, a control keypad and a siren to complete your security package. If you're more interested in monitoring, there are temperature sensors, leak detection sensors and automated electrical switches as well.

The kit is tied together using Motorola's Homesight software. A quick-start wizard asks about wireless networks, so it can configure its own wireless protocol in a way that won't interfere. Next you must get it to discover your peripherals by pressing the detect button on them. All ours were detected correctly. You can rename each device to something more meaningful, such as 'lounge camera' rather than just camera, for instance.

You then need to configure the way the software works using the macro editor. It's quite easy to use and has drop-down menus. Select an event, such as a camera detecting motion, then



choose one or more actions. The software gives you options just for the devices you have connected.

You can send notifications via email with video attachments, and MMS messages to mobile phones. However, the software only natively supports T-Mobile and O₂; those on other networks need to look up the settings, which is a little tricky.

It can only be managed using the PC on which it is installed, which isn't much use if you plan to keep a server in a loft or cupboard. You can get round this by using Windows Remote Desktop.

Homesight is a bit expensive, and you need to be confident in building your security rules. Still, it could be cheaper than having a professional alarm fitted, and there's a wider range of sensors too.

David Ludlow

✓ Simple way to monitor and protect your home; large range of additional sensors

✗ Expensive; can't remotely configure system

SPECIFICATIONS USB 2.4GHz wireless receiver with three wired camera ports, day motion sensor camera, wireless window/door sensor. Part code HMEZ2001

REVIEW VOIP TELEPHONES

VOIPVOICE uConnect V901M

RATING ★★★★★

PRICE £32 inc VAT

SUPPLIER www.firebox.com

DETAILS www.voipvoice.com

RTX TECHNOLOGIES Dualphone

RATING ★★★★★

PRICE £77 inc VAT

SUPPLIER www.expansys.com

DETAILS www.dualphone.net



The bundled software takes care of the Skype connection and detects a handset lift. It will also cause your phone to ring when a Skype or normal landline call comes in. Dialling Skype contacts involves a combination of audible prompts and the keypad, and works surprisingly well. Audio clarity was fine on our test phone calls, and it depends more on the quality of your internet connection. Overall, it's a cheap way to turn your existing phone into an internet one.

If you want to buy a dedicated handset, the Dualphone does the job. It's a standard DECT wireless handset for normal phone calls over a landline, but it also connects to a PC via USB. A dedicated PC button pulls a list of your Skype contacts from the PC, so you can dial by selecting a name. Call quality is great. The manual isn't very good, though. The Quick Guide, the only paper manual in the box, doesn't tell you how to register the phone with the base station. We had to use the full manual on the CD and hunt for the answer.

The Dualphone is a little more expensive than uConnect, but its full Skype integration and ability to run four handsets from one base station make it excellent if you want to use internet calls at home.

David Ludlow

SPECIFICATIONS uConnect USB Hi-Speed interface, takes standard RJ45 telephone, connects to PSTN. Part code V901M Dualphone DECT handset and base station, USB Hi-Speed interface, connects to PSTN. Part code RTX3045



REVIEW NETWORK QUALITY OF SERVICE

HAWKING TECHNOLOGY Broadband Booster

RATING ★★★★★

PRICE £49 inc VAT

SUPPLIER www.lowestonweb.comDETAILS www.hawkingeurope.com

You've probably never heard of or worried about network quality of service (QoS) before, but it is important when you start using a network for real-time services such as VoIP or online gaming. These services rely on data being transferred with as little lag as possible. You can't have a conversation, for example, if the sound keeps cutting out, though for normal downloads the odd pause doesn't matter.

The problem with broadband connections is that uploading a file or using a file-sharing application can hog a lot of your connection's upload bandwidth (see our FAQ), which stops you making voice calls. QoS fixes this by prioritising the time-sensitive traffic and holding back other data.

While some routers have complex QoS tools, Hawking Technology has gone for an easier approach with its Broadband Booster. The small box has two Ethernet ports, and sits between your router and internet connection. Unfortunately, you can't use it if you have an ADSL modem; you'll need an Ethernet modem and standard router instead.

Once connected and powered on, it detects your upload speed and prioritises traffic automatically using Ubicom's StreamEngine technology. There's no configuration possible, so you can't prioritise traffic by user, for example. A web-based management interface lets you check the detected internet settings, which you can override if you prefer. However, it worked correctly on our test internet connection.

To test, we uploaded some large files to online web space and made a Skype phone call as well. Without the Broadband Booster, the call was disjointed and frequently interrupted; using the Broadband Booster, it was like there was no upload. We had a similar experience playing games.

It's quite expensive, but its zero configuration means you don't have to worry about installing it. However, it's worth it only if you play a lot of online games, make internet telephone calls, experience a lot of lag and have an Ethernet modem.

David Ludlow



✓ Takes the lag out of slow networks; very easy to install

✗ Need an Ethernet modem; useful only if you're running real-time traffic and have problems

SPECIFICATIONS Two Ethernet ports, requires Ethernet modem. Part code HBB1

REVIEW WIRELESS ANTENNA

ASUS WL-ANT150

RATING ★★★★★

PRICE £21 inc VAT

SUPPLIER www.morecomputers.co.ukDETAILS www.asus.com.tw

It may look like a modern art sculpture, but Asus's WL-ANT150 is actually an external antenna designed to increase your wireless network's transmission range and speed. The antenna can be attached to most wireless routers with removable antennas; it supports RP SMA and reverse RP SMA plugs. If your router has two antennas, you'll need two WL-ANT150s.

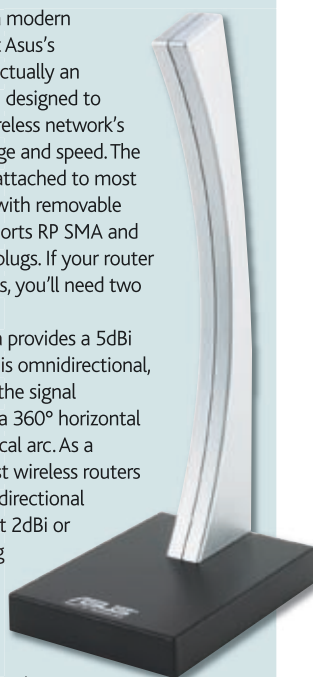
The antenna provides a 5dBi signal boost and is omnidirectional, so it propagates the signal improvement in a 360° horizontal arc and 55° vertical arc. As a comparison, most wireless routers come with omnidirectional antennas rated at 2dBi or less, so upgrading the antenna can do wonders for your network.

To test we used a generic 802.11g wireless router. At close range using its single antenna, we measured throughput of 19.51Mbit/s; at 10m, the signal dipped to 4.61Mbit/s due to interference. We duly replaced the standard antenna with the WL-ANT150, which screwed into the router with no trouble. At close range, we got a slightly worse result of 19.07Mbit/s, but it's nothing to worry about. At 10m our transfer rate was much better, at 10.11Mbit/s. This is a significant increase in performance and it showed how much cleaner the wireless signal was. However, we couldn't get a signal at 20m.

We tested the same router with Hawking's 7dBi omnidirectional antenna, reviewed in *What's New, Shopper* December 2005. This does a similar job but is a little more powerful. Using that antenna, we recorded 18.64Mbit/s at close range, but a much better 12.71Mbit/s at 10m. We could even get a signal at 20m through two walls, although at 1Mbit/s it was suitable only for web browsing.

While the Hawking antenna remains our favourite choice, Asus's WL-ANT150 is £12 cheaper and a good choice for giving a wireless network a slight performance boost.

David Ludlow



✓ Cheap; boosts wireless network speeds

✗ More powerful aerials are available

SPECIFICATIONS External 802.11b/g wireless antenna, 5dBi, RP SMA and reverse RP SMA connectors. Part code WL-ANT150

REVIEW ADSL ROUTER

MERCURY ADSL Router

RATING ★★★★★

PRICE £27 inc VAT

SUPPLIER www.techfever.co.ukDETAILS www.kobian.com

If you don't fancy messing around with wireless networks or simply don't need one, you can share your internet connection with a basic ADSL router such as this one from Mercury. At less than £30 including VAT, this is considerably cheaper than any wireless router. It comes with a four-port Ethernet switch and a USB connection, so you can use it with a PC that doesn't have a network port.

While it may be cheap, it's not the friendliest of products to use. The bundled CD runs a quick-start wizard, which is supposed to make it easy to enter your ADSL settings. While it does a good job to start with, completing the wizard gave us an error message that said: "Your setting already be applied [sic]." To get round this, we connected to the router's web-based management page. This makes no attempt to hide any detail and is incredibly complex and overwhelming. When we found the ADSL settings, we discovered that the correct username and password had been applied and the modem was working correctly. Fortunately, once it's working there aren't any advanced settings that have to be changed, unlike with a wireless router.

Should you want to upgrade to wireless at a later date, you can simply connect a wireless access point. Mercury sells a suitable model, the 802.11g Wireless Access Point (£30), which we used for testing. Its configuration is a little easier to follow and it supports the usual wireless modes and WPA-PSK encryption. There's no simple setup routine, though, and configuration has to be performed through the router's static IP address. We weren't expecting great things from it, so were pleasantly surprised with the results. At close range, we recorded transfer rates of 12.05Mbit/s; at long range, we got 8.97Mbit/s, which we were quite pleased with.

The router is cheap and does the job, but it's hard to configure through its management interface. If you can afford to pay extra, a dedicated wireless router is a better choice.

David Ludlow



✓ Inexpensive; you can add wireless cheaply

✗ Difficult to configure

SPECIFICATIONS ADSL router, four Ethernet ports. Part code KOB WL560-CE